

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Claims 28, 35, and 36 have been amended in the manner suggested in the Advisory Action for overcoming the applied rejections (see Advisory Action page 2, lines 1-9). Support for the amendments is provided for example in paragraphs [0060] and [0061] of the published specification. The amendments were not presented earlier due to the unforeseeability of the remarks presented in the Advisory Action. (It should be noted that references herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

Claims 19-27 were rejected, under 35 USC §103(a), as being unpatentable over Frodigh et al. (US 5,726,978) in view of Terry (US 2004/0009786). To the extent that these rejections may be deemed applicable to the amended claims presented herein, the Applicants respectfully traverse as follows.

Claim 28 recites subject matter of claim 19 more broadly and defines a radio communication apparatus that: (1) selects a plurality of received OFDM subcarriers of higher reception quality, (2) generates one, single-value channel quality indicator (CQI) representing the average of the reception quality of all the selected subcarriers, and (3) reports the generated CQI and information indicating the selected subcarriers to a communicating party. The claimed subject matter provides an advantage of reducing the number of bits to transmit when reporting information about the reception quality of a plurality of subcarriers (see specification page 7, lines 2-6 and 20-23).

The Final Rejection proposes that Frodigh discloses the Applicants' claimed subject matter of generating one CQI reflecting the reception quality of all selected subcarriers (see Final Rejection page 3, lines 12-15). More specifically, the Final Rejection proposes that Frodigh discloses averaging carrier-to-interference (C/I) measurements of multiple subcarriers (see page 2, second sentence of third paragraph).

However, Frodigh discloses that a "link receiver measures C/I on each of the subset of M carriers" (see Frodigh col. 11, lines 4-5, and col. 14, lines 13-14, emphasis added) "and averages the results for each subcarrier" (see col. 14, lines 14-15, emphasis added). The Final Rejection acknowledges that Frodigh discloses averaging multiple C/I measurements over time for a single carrier and doing such for each of a plurality of subcarriers by stating "Frodigh discloses C/I measurements on the [sic] each of the set of M subcarriers and averaging the results" (see Final Rejection page 2, lines 2-3 of third paragraph). Stated more simply, the Final Rejection states that Frodigh discloses taking multiple C/I measurements (i.e., the Final Rejection identifies the C/I measurements in a plural rather than singular sense) on each subcarrier and averaging the results.

The Applicants note that Frodigh discloses averaging, over a period of time, the C/I measurements of a single subcarrier taken at different points in time to produce an average C/I value for this subcarrier over the time period of the measurements.

However, the Applicants respectfully submit that the Final Rejection has misconstrued Frodigh's disclosure of averaging the C/I measurements of a single subcarrier taken over a period of time to be the same thing as the Applicants' claimed subject matter of generating one CQI representing the average of the reception quality of all selected subcarriers.

Although Frodigh discloses that another subcarrier has C/I measurements taken over a period of time and the C/I measurements of this other subcarrier are averaged, the fact that a separate average is generated for each of two subcarriers should not be misconceived as averaging the value of a single C/I measurement taken of a first subcarrier with the value of a single C/I measurement taken of a second subcarrier. The Final Rejection reflects this misconception (see Final Rejection page 2, lines 4-5 of third paragraph). And this same point holds true without regard to whether the M subcarriers disclosed by Frodigh are limited to two subcarriers (i.e., $M=2$) or are greater than two subcarriers (i.e., $M > 2$).

It is noted that Frodigh's calculated average is a time-domain average, whereas the Applicants' claimed subject matter of generating one, single value CQI representing the average reception quality of all selected subcarriers is a characterization of the frequency-domain. With the Applicants' claimed subject matter, one single-value CQI represents an average of the reception quality of all selected subcarriers. Since each subcarrier has a different frequency, the average is obtained with respect to the frequency domain. Frodigh's disclosure of calculating an average value based on measurements taken at different times for a single subcarrier and averaging the measurements is necessarily a time-domain average. Thus, Frodigh's time-domain average differs from the frequency-domain average obtained with the Applicants' claimed subject matter.

Moreover, it is noted that Frodigh discloses that the C/I measurement or average C/I measurement for each subcarrier is used to determine whether the subcarrier will be replaced with an unused subcarrier having better reception quality (see Frodigh col. 12, lines 17-21, and abstract, last sentence). This operation would not be possible if the C/I measurements for all

subcarriers were averaged to produce a single value, as proposed in the Final Rejection. Stated another way, it is not possible to determine which of a plurality of subcarriers has poor reception quality, relative to other subcarriers, from a value obtained by averaging the C/I measurements of a plurality of subcarriers; instead, such a determination requires that the C/I measurement or time-average C/I measurement of each subcarrier be compared to the C/I measurements of the other subcarriers.

Terry is not cited in the Final Rejection for purposes of supplementing the teachings of Frodigh with respect to the above-mentioned subject matter distinguishing claim 28 from Frodigh's disclosure.

Accordingly, the Applicants submit that even if Frodigh and Terry were combined as proposed in the Final Rejection, the result still would lack the above-noted subject matter of claim 28, and thus, these references, considered individually or in combination, do not render obvious the subject matter defined by claim 28. Independent claims 35 and 36 now similarly recite the above-mentioned subject matter distinguishing apparatus claim 28 from the applied references, although claim 35 does so with respect to a method. The dependent claims are deemed to be allowable at least due to their dependence from an allowable independent claim. Therefore, allowance of claims 28, 35, and 36 and all claims dependent therefrom is deemed to be warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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JEL/DWW/att

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